

REMARKS

This paper is responsive to an Official Action that was issued in this case on November 20, 2006. In the Action, claims 7, 8, and 13 through 20 were rejected, while claims 11 and 12 were objected to as being dependent upon a rejected base claim. Claims 11 and 12 were deemed allowable if rewritten in independent form including the limitations of the base claim.

Therefore, claims 1-6 and 11 have been canceled, without prejudice. Claim 7, as amended, is the previous version of claim 11 rewritten in independent form and includes all the limitations of the previous version of claim 7. In addition, claims 21 through 29 have been added. New claim 21 is the previous version of claim 12 rewritten in independent form and includes all the limitations of the previous version of claim 7. Reconsideration is respectfully requested in view of the foregoing amendments and the following comments.

35 U.S.C. 103 Rejection of Claims 7, 8, and 13 through 20

Claims 7, 8, and 13 through 20 were rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Pat. No. 6,127,881 to Tsay *et al.* (hereinafter, "Tsay") in view of U.S. Patent No. 6,157,245 to Rincon-Mora, *et al.* (hereinafter, "Rincon-Mora") and in further view of U.S. Patent No. 6,744,712 to Rhee, *et al.* (hereinafter, "Rhee"). Claims 11 and 12 were objected to as being as being dependent upon a rejected base claim, but was deemed allowable if rewritten in independent form including all the limitation of the previous version of claim 7. In this paper, amended claim 7 and new claim 21 are the previous versions of claims 11 and 12 (respectively) rewritten in independent form including all the limitations of the previous version of claim 7.

Claim 7, as amended, recites:

7. An apparatus comprising:

a bandgap reference voltage generator having an output terminal **and a bias terminal**;

an operational amplifier having a positive input terminal, a negative input terminal, and an output terminal, wherein the negative input terminal of said operational amplifier is electrically connected directly to the output terminal of said bandgap reference voltage generator without intervening elements;

a transistor having a gate, a source, and a drain, wherein the gate of said transistor is electrically connected directly to the output of said operational amplifier without intervening elements, and wherein the drain of said transistor is electrically connected directly to the positive input terminal of said operational amplifier without intervening elements;

a voltage divider having a input terminal, an output terminal, and a common terminal, wherein said input terminal of said voltage divider is electrically connected directly to the positive input terminal of said operational amplifier without intervening elements;

a startup network having a first positive supply terminal and an output terminal, wherein said output terminal of said startup network is electrically connected directly to said input terminal of said voltage divider without intervening elements; and

a self-biasing network having a second positive supply terminal, a common terminal, and an output terminal, wherein said second positive supply terminal of said self-biasing network is electrically connected directly to said output terminal of said startup network without intervening elements, and wherein said common terminal of said self-biasing network is electrically connected directly to said common terminal of said voltage divider without intervening elements, **and further wherein said output terminal of said self-biasing network is electrically connected directly to the bias terminal of said bandgap voltage reference generator without intervening elements.**

(Emphasis supplied)

Nowhere does the prior art teach or suggest, alone or in combination, what amended claim 7 recites – namely that the self-biasing circuit biases the bandgap circuit. The applicants respectfully assert that claim 7, as amended, overcomes the rejection.

Because claims 8 and 12-20 depend on claim 7, the applicants respectfully submit that the rejection of them is also overcome. Furthermore, dependent claims 8 and 12-20 recite additional patentable features that provide a secondary basis for their patentability.

New claim 21 recites:

21. An apparatus comprising:

- a bandgap reference voltage generator having an output terminal;
- an operational amplifier having a positive input terminal, a negative input terminal, **a bias terminal**, and an output terminal, wherein the negative input terminal of said operational amplifier is electrically connected directly to the output terminal of said bandgap reference voltage generator without intervening elements;
- a transistor having a gate, a source, and a drain, wherein the gate of said transistor is electrically connected directly to the output of said operational amplifier without intervening elements, and wherein the drain of said transistor is electrically connected directly to the positive input terminal of said operational amplifier without intervening elements;
- a voltage divider having an input terminal, an output terminal, and a common terminal, wherein said input terminal of said voltage divider is electrically connected directly to the positive input terminal of said operational amplifier without intervening elements;
- a startup network having a first positive supply terminal and an output terminal, wherein said output terminal of said startup network is electrically connected directly to said input terminal of said voltage divider without intervening elements; and
- a self-biasing network having a second positive supply terminal, a common terminal, and an output terminal, wherein said second positive supply terminal of said self-biasing network is electrically connected directly to said output terminal of said startup network without intervening elements, and wherein said common terminal of said self-biasing network is electrically connected directly to said common terminal of said voltage divider without intervening elements, **and further wherein said output terminal of said self-biasing network is electrically connected directly to said bias terminal of said operational amplifier without intervening elements.**

(Emphasis supplied)

New claim 21 is the previous version of claim 12 rewritten in independent form including all the limitations of the previous version of claim 7. Claims 22 through 29 are dependent claims 13 through 20 rewritten to have dependency on new claim 21. The applicants respectfully assert that new claim 21 overcomes the rejection of the previous version of claim 12.

Because claims 22-29 depend on claim 21, the applicants respectfully submit that they too are allowable. Furthermore, dependent claims 22-29 recite additional patentable features that provide a secondary basis for their patentability.

Conclusion

It is believed that claims 7, 8, and 12 through 29 now presented for examination are in condition for allowance. As a consequence, the Examiner is requested to allow all of the pending claims and pass the application to issue.

Respectfully,

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